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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/087,109	03/01/2002	Michael Andrew Fischer	680-001us	4191

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EXAMINER	
TORRES, JOSEPH D	
ART UNIT	PAPER NUMBER
2133	

DATE MAILED: 08/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/087,109	FISCHER, MICHAEL ANDREW	
	Examiner	Art Unit	
	Joseph D. Torres	2133	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 March 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *01 March 2002* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *03/01/02,03/10/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: '102-**N**' on page 5. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: '102-**n**' in Figure 1 and '300' in Figure 3. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet,

even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claims 1-21 are objected to because of the following informalities: Claims 1 and 17 recite "A method" in the preamble, which is insufficient to determine what the claims are directed to. Claim 9 recites "An apparatus" in the preamble, which is insufficient to determine what the claim is directed to. The Examiner assumes claims 1 and 17 are directed to –A method for forming a frame--. The Examiner assumes claim 9 is directed to –An apparatus for forming a frame--. Appropriate correction is required.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 1-8 and 17-21 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 1 and 17 are directed to a data structure for storing particular types of data. Note: a frame is a data structure.

Claims 9-16 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 9 is directed to forming a data structure for storing particular types of data and although claim 9 recites a means for transmitting the frame there is not a clear relationship between the data frame and the transmission channel nor does the transmission channel have any structural effect on the data frame.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 3 and 11 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Nowhere does the Applicant teach a code capable of always correcting j bits of error in the header and j bits of error in the payload. Claim 3 contradicts claim 1. Claim 11 contradicts claim 9.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 17-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Kuroda; Toru et al. (US 5432800 A, hereafter referred to as Kuroda).

35 U.S.C. 102(b) rejection of claim 17.

Kuroda teaches forming a data frame comprising a header field (BIC 1 and 2 in Figure 2 of Kuroda is a header field), a payload field (Everything other than BIC 1 and 2 in Figure 2 of Kuroda is a payload field), and a framewide parity field (the last column of 82 bits in Figure 2 of Kuroda is a framewide parity field), wherein said payload field comprises: a payload data subfield (the information field in Figure 2 of Kuroda is a payload data subfield), a first parity subfield (CRC in Figure 2 of Kuroda is a first parity subfield), and a second parity subfield (the last 82 rows in Figure 2 of Kuroda is a second parity subfield); populating said framewide parity field with at least one parity bit from a first error-control coding scheme that can detect at least i bit errors in said data frame, wherein i is a positive integer (the last column of 82 bits in Figure 2 of Kuroda is populated with at least one parity bit from a first error-control coding scheme that can detect at least i bit errors in said data frame, wherein i is a positive integer); populating said first parity subfield with at least one parity bit from a second error-control coding scheme that can correct at least j bit errors in said data frame, wherein j is a positive integer (CRC in Figure 2 of Kuroda is said first parity subfield with at least one parity bit from a second error-control coding scheme that can correct at least j bit errors in said data frame, wherein j is a positive integer); and populating said second parity subfield

with at least one parity bit from a third error-control coding scheme that can correct at least k bit errors in said payload data subfield, wherein k is a positive integer (the last 82 rows in Figure 2 of Kuroda is said second parity subfield with at least one parity bit from a third error-control coding scheme that can correct at least k bit errors in said payload data subfield, wherein k is a positive integer).

35 U.S.C. 102(b) rejection of claims 18-20.

Claims 18-20 are alternative embodiments encompassed by the teachings in the Kuroda patent.

35 U.S.C. 102(b) rejection of claim 21.

Parity or checksum data is block code.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 1-4 and 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsunoda; Keiji (US 6516435 B1) in view of Kang; Woo-shik et al. (US 6615382 B1, hereafter referred to as Kang).

35 U.S.C. 103(a) rejection of claims 1 and 9.

Tsunoda teaches forming a data frame comprising a header field (the packet 1302 in Figure 7 of Tsunoda), a payload field (the vertical columns of the packet 1302 in Figure 7 Tsunoda are a payload field), and a framewide parity field (the last three columns of packet 1302 in Figure 7 Tsunoda are a framewide parity field), wherein said payload field comprises a first parity subfield (the last three columns of packet 1302 in Figure 7 Tsunoda are comprises a first parity subfield); and populating said framewide parity field with at least one parity bit from a first error-control coding scheme that can detect at least i bit errors in said data frame, wherein i is a positive integer (the last three columns of packet 1302 in Figure 7 Tsunoda are comprises a framewide parity field with at least one parity bit from a first error-control coding scheme that can detect at least i bit errors in said data frame). In addition, Figure 7 teaches the use of Header FEC.

Note: terminals 1201 and 1202 in Figure 6 of Tsunoda are processors for receiving and transmitting data over the internet.

However Tsunoda does not explicitly teach the specific use of populating said first parity subfield with at least one parity bit from a second error-control coding scheme that can correct at least j bit errors in said header field, wherein j is a positive integer.

Kang, in an analogous art, teaches use of populating said first parity subfield with at least one parity bit from a second error-control coding scheme that can correct at least j bit errors in said header field, wherein j is a positive integer (col. 8, lines 63-67 in Kang teach that strong FEC is used for the header; Col. 10, lines 28-38 in Kang teaches segmenting the payload in order to make room for the stronger header FEC).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Tsunoda with the teachings of Kang by including use of populating said first parity subfield with at least one parity bit from a second error-control coding scheme that can correct at least j bit errors in said header field, wherein j is a positive integer. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of populating said first parity subfield with at least one parity bit from a second error-control coding scheme that can correct at least j bit errors in said header field, wherein j is a positive integer would have provided the opportunity to use stronger (col. 8, lines 63-67 in Kang).

35 U.S.C. 103(a) rejection of claims 2 and 10.

Col. 8, lines 63-67 in Kang teach that strong FEC is used for the header which implies j>i.

35 U.S.C. 103(a) rejection of claims 3 and 11.

The last three columns of packet 1302 in Figure 7 Tsunoda are comprises a framewide parity field with at least one parity bit from a first error-control coding scheme that can detect at least i bit errors in said data frame.

35 U.S.C. 103(a) rejection of claims 4 and 12.

Parity or checksum data is block code.

7. Claims 5-8 and 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsunoda; Keiji (US 6516435 B1) and Kang; Woo-shik et al. (US 6615382 B1, hereafter referred to as Kang) in view of Hinedi; Sami M. et al. (US 6263466 B1, hereafter referred to as Hinedi).

35 U.S.C. 103(a) rejection of claims 5 and 13.

Tsunoda and Kang substantially teaches the claimed invention described in claims 1-4 (as rejected above).

However Tsunoda and Kang do not explicitly teach the specific use of populating a second parity subfield with at least one parity bit from a third error-control coding scheme that can correct at least k bit errors in said payload field, wherein k is a positive integer.

Hinedi, in an analogous art, teaches the use of 4 encoders: Header Outer Encoder 64, Header Inner Encoder 60, Payload Outer Encoder 70 and Payload Inner Encoder 74 in Figure 6 of Hinedi.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Tsunoda and Kang with the teachings of Hinedi by including use of populating a second parity subfield with at least one parity bit from a third error-control coding scheme that can correct at least k bit errors in said payload field, wherein k is a positive integer. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of populating a second parity subfield with at least one parity bit from a third error-control coding scheme that can correct at least k bit errors in said payload field, wherein k is a positive integer would have provided the opportunity to use serial or parallel concatenated codes.

35 U.S.C. 103(a) rejection of claims 6-8 and 14-16.

Claims 6-8 and 13-15 are alternative embodiments encompassed by the teachings in the Tsunoda, Kang and Hinedi patents.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph D. Torres whose telephone number is (703) 308-7066. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (703) 305-9595. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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